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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

FOREST INSECT INVESTIGATIONS

REPORT ON CURRENT FOREST INSECT INFESTATIONS IN THE YOSEMITE NATIONAL PARK

Season of 1938

by
J. E. Patterson and S. T. Carlson
Berkeley, California
October 4, 1938

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Forest Insect Laboratory
Berkeley, California
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REPORT ON CURRENT FOREST INSECT CONDITIONS IN THE YOSEMITE NATIONAL PARK

Season of 1938

APPROVED BY:

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Senior Entomologist, In Charge

SUBMITTED BY:

J. E. Patterson
Associate Entomologist

S. P. Carlson
Agent

REPORT ON CURRENT FOREST INSECT CONDITIONS IN THE YOSEMITE NATIONAL PARK, CALIF.

Season of 1938.

Examination of the forests in Yosemite National Park to determine the amount and character of current forest insect infestations has been made at different intervals during the 1938 field season. These examinations have been made in conformance with stipulations contained in our memorandum of July 15, 1938, and consist of general observations over large areas with more intensive investigations in local units, on individual forest types and on the research plots.

Examinations in the ponderosa pine - sugar pine - lodgepole pine - fir types were made throughout the season, principally by S. T. Carlson and field crew. Examinations in the lodgepole pine forests of the Tuolumne watershed were made by J. E. Patterson. The results of these are given in the following report.

Special emphasis was given to a survey of the lodgepole forests in order to ascertain the present distribution of the lodgepole pine needleminer, and of any epidemic centers of mountain pine beetle infestation in these defoliated stands. These surveys were conducted by Forester E. F. Ernst; J. S. Yuill of the Bureau participating in a technical capacity. The results of these surveys will be submitted in a separate report.

Infestation conditions are generally good and immediate control measures are not recommended except in certain local high use areas of lodgepole pine where the mountain pine beetle is annually taking high toll.

Some concern is felt over possible attacks to standing trees that may result from the barkbeetle broods that developed in the numerous trees which were uprooted late in 1937 and during the winter of 1938. The season is not yet far enough advanced to determine what the loss from these attacks will be. A close watch should be maintained late this fall and during the early spring of 1939 to detect any material increase in infested sugar or ponderosa pine.

The following is a description of the barkbeetle infestation by areas and forest types.

I. Sugar Pine - Ponderosa Pine Types

A. Mariposa Grove. Infestation relatively light; losses during the past summer are endemic. A build up in losses may occur during the late fall period, following emergence of broods from windfalls.

B. Wawona Basin. Infestation relatively light; losses during the past summer are endemic. There is no reason to expect an early increase in losses.

C. Wawona Road. Infestation light, although there is a slight increase over the previous year.

D. Big Oak Flat Road. Infestation relatively light, conditions appear to be equal to those during 1937.

II. Red Fir - White Fir Types.

A. Glacier Point Road. Intensive surveys in the forests of this area show a relatively high loss in the red fir from combined attacks of the fir engraver beetle and round-headed borers. A 100% cruise of a 160-acre plot in the Badger Pass Ski Development Area shows that 80 red fir and 5 white fir were killed by these insects in 1937. Reductions of these losses by artificial control is difficult in that the trees are generally killed by successive attacks over a period of years, and in some instandes the tree is able to recover.

III. Lodgepole Pine Type.

A. Tuolumne Meadows. Infestation here is endemic and is confined to a few trees bordering the new road right of way.

B. Porcupine Flat. Infestation here is substantially the same as have been those of the past five years, i.e. epidemic. On an area of 5 acres, the loss from the mountain pine beetle was 26 trees; that during 1938 is 22 trees, showing a very slight decrease. Of an original stand of 1364 lodgepole pine trees, only 724 trees are now alive, the others having been killed by mountain pine beetle attacks over a period of five years. Continued losses at this rate would result in a ghost forest in another five year period.

C. Pothole Meadows (Glacier Point Road). Epidemic infestations prevail here. Losses from the mountain pine beetle on a sample plot of 160 acres shows a loss of 56 trees in 1937.

D. Mono Meadows. Epidemic conditions prevail here. There is no decrease in the 1938 losses over those of 1937. The 1938 infestation on the 40-acre sample plot contains 21 lodgepole pine killed by the mountain pine beetle.

RECOMMENDATIONS

Control measures are recommended in the following areas:

1. Porcupine Flat. Lodgepole pine.
2. Mono Meadows. Lodgepole pine.
3. Pothole Meadows. Lodgepole pine.

4. Bridalveil Meadows. Lodgepole pine.
5. Wawona Road (between Chinquapin and tunnel). Sugar and ponderosa pine type.

Control of the mountain pine beetle in the lodgepole pine of the above mentioned areas is highly important in that the infestation threatens to wipe out the entire stand of mature lodgepole pine and has the possibility of going into the present uninfested type in the Bridalveil Meadows area.

Maintenance control work in the sugar pine - ponderosa pine types between Chinquapin and the Wawona Tunnel is recommended. This area during the past two seasons has shown a slight increase in infestation.

A summary of the season's loss cruises is appended as a necessary record.

J. E. Patterson

S. T. Carlson

Berkeley, California
October 1, 1938.

SUMMARY OF 1938 CRUISES - YOSEMITE NATIONAL PARK

Plot	Size (acres)	Year	Species	No.	Vol. (bf)	Insects	Remarks
Aspen Valley	320	1937	Ponderosa Pine	15	45,230	D.b., D.m. Fh.	June 1938 examination
			Sugar pine	1	650	D.m.	
			Incense cedar	8	10,890	Rh. borer	
			White fir	8	18,280	Rh. borer	
	TOTAL			32	75,050		
Badger Pass	160	1937	Red fir	80	115,220	Fir engraver Rh. borer	Cruised July 1938
			White fir	2	10,380	Fir engraver Rh. borer	
	TOTAL			82	125.600		
Pothole Meadows	160	1937	Lodgepole pine	56	25,610	Mt. pine beetle	Cruised July 1938
			Red fir	19	34,500		
	TOTAL			75	60,110		
Mono Mdws.	40	1937	Lodgepole pine	28	13,580	Mt. pine beetle	Cruised Sept. 1938
		1938	"	21	11,400	"	"
Wawona	240	1937	Ponderosa pine	4	340	D.m., D.b.	June 1938 cruise
			White fir	1	4,530	Rh. borer	
			Incense cedar	2	2,540	Rh. borer	
	TOTAL			7	7,410		
Porcupine Flat	5	1937	Lodgepole pine	26		Mt. pine beetle	Sept. 1938 cruise
		1938	"	22		"	"
Mariposa Grove (strip cruise)	240	1938	Ponderosa pine	3	15,820	D.b.,D.m.	Sept. 1938 cruise
			Sugar pine	2	27,530	D.m.	One windfall
			Incense cedar	1	760	Rh. borers	
			White fir	5	20,220	Fir engraver Rh. borer	One windfall
	TOTAL			11	64,330		